Amendments to the Claims:

This listing of claims will replace the prior version in the application.

1. (currently amended) A mixture of isomers of dodecanethiol prepared by a process ~~for the catalytic reaction~~ of reacting hydrogen sulfide with ~~the~~ a trimer of n-butene in the presence of a catalyst, ~~and~~ said mixture of isomers exhibiting a diagram of distillation temperatures, at 19 millibar, such that point 50 is 123°C ± 1°C and that the difference in temperature between point 20 and point 80 is less than or equal to 4°C.

2. (previously presented) The mixture as claimed in claim 1, characterized in that the catalyst is chosen from an acid compound, a metal oxide or a combination ~~of these 2 products~~ thereof.

3. (currently amended) The mixture as claimed in ~~either of claims 1 and 2~~ claim 1, characterized in that the catalyst is a cation-exchange resin.

4. (currently amended) The mixture as claimed in ~~one of claims 1 to 3~~ claim 1, characterized in that the catalyst is a copolymer of sulfonated styrene with divinylbenzene.

5. (currently amended) The mixture as claimed in ~~one of claims 1 to 4~~ claim 1, characterized in that the molar ratio of the hydrogen sulfide to the ~~olefin~~ trimer of n-butene is between 1 and 100~~, preferably between 1 and 20~~.

6. (currently amended) The mixture as claimed in claim ~~5~~ 1, characterized in that the molar ratio of the hydrogen sulfide to the ~~olefin~~ trimer of n-butene is between 1 and 5.

7. (currently amended) The mixture as claimed in ~~one of claims 1 to 6~~ claim 1, characterized in that the process is carried out at a temperature of between 10 and 250°C and at a pressure of between 5 and 80 bar.

8. (currently amended) The mixture as claimed in claim ~~7~~ 1, characterized in that the process is carried out at a temperature of between 50 and 150°C and at a pressure of

between 10 and 50 bar.

9. (currently amended) The mixture as claimed in claim ~~8~~ 1, characterized in that the process is carried out at a temperature of between 70 and 120°C and at a pressure of between 10 and 20 bar.

10. (currently amended) A process for the preparation of the ~~mixtures~~ mixture of ~~claims 1 to 9~~ claim 1, characterized in that it comprises the reaction of hydrogen sulfide with tri(n-butene) in the presence of an acid catalyst.

11. (currently amended) A process for radical (co)polymerization, characterized in that it is carried out in the presence of the mixture as claimed in ~~one of claims 1 to 9~~ claim 1 used as chain-transfer agent.

12. (currently amended) A process for the synthesis of di(tert-dodecyl) polysulfides, characterized in that it is carried out by reaction of the mixture as claimed in ~~one of claims 1 to 9~~ claim 1 with sulfur in the presence of a basic catalyst.

13. (new) The mixture as claimed in claim 1, characterized in that the molar ratio of the hydrogen sulfide to the trimer of n-butene is between 1 and 20.

14. (new) A process for preparing a mixture of isomers of dodecanethiol comprising reacting hydrogen sulfide with an olefin in the presence of a catalyst, said mixture of isomers exhibiting a diagram of distillation temperatures, at 19 millibar, such that point 50 is 123°C ± 1°C and that the difference in temperature between point 20 and point 80 is less than or equal to 4°C.

15. (new) The process of claim 14, characterized in that said olefin is a trimer of n-butene.

16. (new) The process as claimed in claim 14, characterized in that the catalyst is chosen from an acid compound, a metal oxide or a combination thereof.

17. (new) The process as claimed in claim 14, characterized in that the catalyst is a cation-exchange resin.

18. (new) The process as claimed in claim 14, characterized in that the catalyst is a copolymer of sulfonated styrene with divinylbenzene.

19. (new) The process as claimed in claim 14, characterized in that the molar ratio of the hydrogen sulfide to the olefin is between 1 and 100.

20. (new) The process as claimed in claim 14, characterized in that the process is carried out at a temperature of between 10 and 250°C and at a pressure of between 5 and 80 bar.

Respectfully submitted,

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